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ABSTRACT

In order to be effective in the coming millennium, libraries will need to measure their performance rigorously against the expectations and real needs of their customers. The library of the future will need to be a customer sensitive, knowledge creating, agile enterprise. It must provide value to every customer, where value is the customer's perception of total lifetime benefits minus total lifetime costs. It must continually exchange information and ideas with its customers and suppliers to deliver customized products and services. The library must quickly reconfigure its products, services, and processes, and it must integrate expertise from other organizations to remain competitive. Consequently, it will become critical to create an environment grounded in ongoing innovation and learning--one that will benefit from external uncertainty and unpredictability. Employees will need skills and knowledge to make empowered decisions and work in a variety of roles. This article deals with the burden of libraries to respond quickly to the changing needs of their customers. In other words, libraries of the future need to be organized as Fast Response Libraries (FRL). This will be done if libraries are well prepared for dealing successfully with challenges posed by an increasingly competitive and time-responsive marketplace. This requires libraries and librarians to understand and accept that competing against new sources of knowledge necessitates a library to use all of its resources most effectively. These resources must therefore be integrated and focused on how best to support the library's competitive strategy. (MES)

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FROM INDUSTRY TO HIGHER EDUCATION AND LIBRARIES BUILDING THE FAST RESPONSE LIBRARY (FRL)

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Abstract: In the coming millenium, libraries in order to be effective, need to measure their performance rigorously against the expectations and real needs of their customers. The library of the future will need to be customer sensitive, knowledge creating, agile enterprise. It must provide value to every customer, where value is the customer's perception of total lifetime benefits minus total lifetime costs. It must continually exchange information and ideas with its customers and suppliers to deliver customized products and services. The library must quickly reconfigure its products, services and processes, and it must integrate expertise from other organizations to remain competitive. Consequently, it will become critical to create an environment grounded in ongoing innovation and learning – one that will benefit from external uncertainty and unpredictability. Employees will need skills and knowledge to make empowered decisions and work in a variety of roles. This article is written to deal with the need that libraries had to respond fast to the changing needs of their customers. In other words, libraries of the future need to be organized as Fast Response Libraries (FRL). This will be done if libraries be well prepared for dealing successfully with challenges posed by an increasingly competitive and time – responsive marketplace. This requires libraries and librarians to understand and accept that competing against the new sources of knowledge requires a library to use all its resources at the most effective. These resources must therefore be integrated and focused on how best to support the library's competitive strategy.

The Fast Response Organization and the new Manager

There is a revolution going on in management today. Old understandings are being questioned as never before. New insights are changing the way managers understand their responsibilities. Those running the most admired corporations view their companies in a new light, as systems made of interacting and interrelated parts. They understand that the primary purpose of their companies is meeting and exceeding customer needs and expectations. They know that this is what generates profits so they will be around tomorrow. This systems view has brought about a new attitude and approach for successfully serving customers needs. The emphasis is on bringing employees together as team members to execute organizational processes. This approach includes a variety of techniques for helping an organization continuously improve its productivity and the quality and value of its products and services.

Organizations of the future had to respond fast to the changing needs of their customers. This will be done if they are well prepared for dealing successfully with challenges posed by an increasingly competitive and time-responsive marketplace. This requires the organizations to understand and accept that competing against the new

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sources of knowledge requires that the organization will use all its resources at their most effective. These resources must therefore be integrated and focused on how best to support the organization's competitive strategy.

In this new environment, managers in both manufacturing and service organizations must be capable of conducting and managing complex design, planning, and control activities. In addition, managers must be capable of making decisions, and that requires an ability to think strategically and to understand why and when to do something, not just how. Every manager should understand the impact of operations on corporate strategy and other elements in the value chain and how to integrate operations effectively into the corporation at all levels. Every manager should also have command of available quantitative tools and techniques.

We give emphasis to the context of the leading edge organization we call fast response organization (FRO), a term introduced by Noori and Radford in their book "Total Quality and Responsiveness". An FRO is organized around six dimensions of competition, or competitive drives:

- Product quality
- Total service support for products and for suppliers and customers
- Product and process flexibility
- The strategic use of time, especially as a value adding concept
- Costs, primarily in a customer-oriented, net value sense
- Dependability in honoring commitments in the marketplace

These drivers are an integral part of the philosophy underlying Total Quality Management (TQM). The strategic implication of the TQM philosophy is that FROs must use all their resources to the fullest, including the capabilities of all employees.

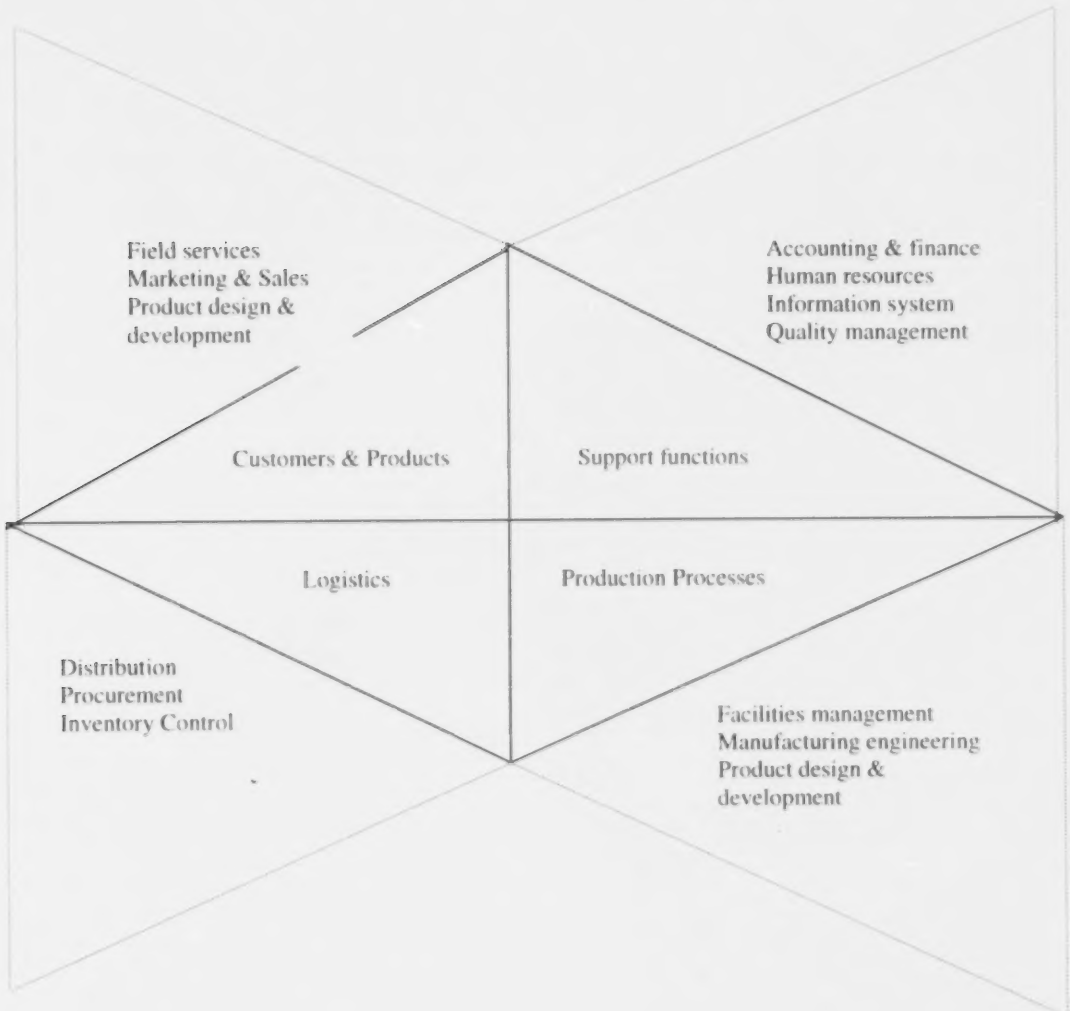
We also can find another term, introduced by Steve Levit, for this kind of organizations: Response Managed Organization (RMO). There are many common characteristics between these organizations and the reader can choose the term he prefers.

Structurally, an FRO has relatively few layers of management. A well-integrated, learn organization can react quickly, and individuals within the firm can work together easily. Transforming a multilevel library into such an organization is challenging.

The operations of a library, as at all organizations, can be grouped into four major categories: customers and products, production processes, Logistics and support functions. The close relationships among these categories

become clear when one takes a closer look at the activities within each category. As demonstrated by the dynamic diamond in the next Exhibit, this reinforces the need for internal and external integration.

Figure 1: The dynamic diamond: Integrating critical management and operations functions



Quality and Non-Profit Organizations

Sitting behind the front desk of the library at the dead hours of the day, many of the librarians and especially those that are at the upper levels and have some kind of administrative responsibilities, may think of the following:

- We operate of the thinnest of profit margins.
- We are constantly scrambling after suppliers with finite resources.
- We must turn raw materials into extremely value-added products and services at the lowest possible cost and in the shortest possible time.
- We do not always know who our customers are or will be, but when they need us, our response must be fast and accurate.
- We have low-paid, dedicated employees.
- Many of our workers do not even get a payback.

This is maybe not very long from the picture of a non-profit organization. While many non-profits do not experience all the above, most factors apply. Non-profits have people focused on achieving specific objectives for their constituencies. They do this with limited budget and a constant need to raise cash through donations, grants, or assessments.

When talking about how non-profits use quality, it is first necessary to clear up a few misconceptions:

- **You cannot view or run a non-profit as a business**. In reality, for-profit and non-profit organizations operate along similar lines. They both have markets, business processes that produce value-added products and services, and individuals or organizations that provide the funds necessary for the organization to operate.
- **Non-profits cannot measure performance**. In the traditional, profit oriented sense, this is true. Measures such as economic value added, market value, and debt / equity ratios do not apply or are marginally useful for non-profits. We are, however, more interested in the impact our services have on the communities we serve.
- **Quality improvement techniques do not apply**. Nothing could be further from the truth. Non-profit organizations, for several years, have focused on improving their operations with quality management tools and techniques. Like the service industry, non-profits use these methods to enhance operations and address internal and external issues.

A quality-oriented perspective has never been more important. First, there is increasing focus on results. This issue is very basic. Does the non-profit have an impact on the community it serves?

To compete in this world and stay viable, non-profits have and are adopting business-based operational paradigms.

Satisfying the customer

The first test of the effectiveness of an organization's operating system is the ability of that organization to supply customers with products and services they actually want, leaving enough of a margin to enable the organization to prosper in the long-term. This means supplying the products and services needed in the quantities desired and at the time required. This practice is called total product quality. If an organization is not prepared to do this, another organization will oblige its customers.

Although the "who", "what" and "how much" questions asked by the organization in trying to develop the ability to satisfy customers are interrelated, the "who" and "how much" questions are usually asked first, particularly in the traditional model of demand management. In the traditional model, the focus is on the organization's operating system and the emphasis is on figuring out how to move enough products to the final customers to keep the operations running at a profitable capacity.

Setting the stage: Positioning for quality

Have you ever arrived on time for a doctor's appointment only to wait an hour to see the doctor? Or tried to pick up a watch from the repair shop on the promised date only to find out that it has not been touched? Or stood in a growing line at the supermarket and wondered why only half the checkouts were open?

Frustrating customers is not the only consequence of poor scheduling. Product costs soar and quality suffers when feasible schedules cannot be developed and executed.

No matter how successful an organization is, its managers must continually ask questions such as the following:

- How can the organization improve its operations?
- How can the organization utilize its resources more effectively to satisfy customers' needs?

Organizations intent on succeeding in the modern competitive environment must understand the new character of competition. These organizations also have to internalize the new drivers or levers of competition and

advantage and learn how to use them in this environment. Until these things are done, building an enterprise that can sustain growth will be difficult.

Minimizing the time "distance" between recognition and satisfaction of customer demand is a necessity for an organization that wishes to remain responsive in a competitive environment. Demand management and internal control of operations first establish the demand to be met and then determine how to satisfy it in the most effective and efficient manner. Internal conditions are only one part of the process, though, and most librarians ask the following questions:

- How should the library manage its relationships with its suppliers?
- How can the library influence the passage of its product between its production facility and the consumer's hands?

Both questions acknowledge the tight interdependence of all the links in the value chain and the need for effective management of the entire process. Fast-Response Libraries cannot coexist with slow suppliers and a tortuous distribution system.

Many managers are asking themselves how they can make their organizations competitive, in the rapidly changing global environment, just as many are asking how they can focus their competitive strategy. There are some competitive characteristics shared by many organizations, and no organization can succeed without every person with a stake in the organization working constantly to improve the organization's effectiveness in these areas. The term for the philosophy underlying the enactment of these themes is fast responsiveness. This implies a customer-focused organization and an operation fully committed to total quality management (TQM).

But what does it mean, though, to satisfy a customer? Customers are satisfied when they receive the total product they desire, including ancillary and support goods and services, at a price they can afford and accept. If organizations fail to do this and customers have other ways of satisfying their needs, the customers will migrate and the organization will fail. This type of attrition happens more rapidly in turbulent times, when customers are prepared to search for alternatives.

It is important therefore for every organization to recognize the central position occupied by its customers and the need to have its primary aim their satisfaction. This recognition is widely accepted, although is still confusion about what it implies operationally.

The need to satisfy customers is being recognized by non-business organizations as well. An increasing number of governments, government departments, and government supported groups have developed awards that highlight and promote the need to satisfy the customers. Underlying most of these awards is the recognition that

the profitable survival of for-profit businesses is an essential ingredient in the survival of the local, regional, and national economy.

As we said above, it is easy to agree on the importance of satisfying the customer; however, it is another matter to agree on the definition of customer satisfaction. What may differ are the ways in which these issues have to be addressed in each instance.

Responsiveness

Satisfying customers is in part a function of responding to real needs and expectations, which are constantly evolving and changing. This is perhaps the most critical management issue, and many organizations are reluctant to alter a previously successful formula. Responsiveness is not a reaction; it is a planned state of preparedness to which the successful organizations aspire. This preparedness is both tactical and strategic, often dealing with issues about which customers may not be aware.

Complexity

Satisfying the customer is becoming increasingly complex. Because of increasing knowledge and changing competitor actions, customers expect to be satisfied across a widening range of factors. Management of this increasingly complex sense of products requires an increasingly complex set of management skills. In most instances this complexity can best be exercised in a group than an individual decision-making setting.

Unity of Product

The traditional dichotomy between service and manufacturing operations must be questioned. There is a difference between tangible and intangible elements, and virtually all products have a mix of these elements. Thus organizations may benefit by developing a new understanding of what a product actually is.

It must now be recognized that each product consists of a core concept, critical components, and facilities goods and services. The core product concept defines the basic business. Facilitating goods and services are disrectionary product elements by which an organization differentiates its products from those of its competitors.

Integration & Value Added

Increasing complexity can lead to confusion and chaos. Organizations therefore need to eliminate confusion through control devices that ensure that every person and function works with the same information and toward

the same ends. This integration of functions, processes, and products must have a focus, and in all the successful organizations the focus is the customer and satisfying the customer. In fact, each organization has institutionalized the customer focus; that is, everybody in the organization accepts the customer's central position.

If the focus of the organization is the customer, everything the organization does should improve matters for the customer. This gives rise to the concept value added and to thinking of processes and activities as being either value-added or non-value-added activities while enhancing the value they add to the customer at every step. This concept applies not only to essential manufacturing steps but to managerial, administrative, and service activities as well.

Operations Excellence & Teamwork

To be responsive, an organization has to have excellent operations. Excellence in operations is not the only factor, of course. Operations must also be capable of effectively supporting what the organization wants to do. This means a couple of things: first, the operations must be well managed, and second, every manager must be aware of what the operations function is capable of supporting.

Integration, responsiveness and excellence all imply teamwork. The teams exist in the operating areas and markedly improve performance. The organizations also use teams in other areas, starting with effective senior management teams.

Difference & Commonality

Each organization is different from the others, and each is unique in many ways. These differences are manifested in several ways: products, processes, markets, pressures on managers and other people, means of evaluation and control, and ways of organizing the enterprise.

There are, however, underlying characteristics that are common to all successful organizations:

- Close links between the organization and its customers
- Close links between the organization and its suppliers
- A commitment to continually improve the ability to compete simultaneously on cost, quality, flexibility, dependability, time, and service
- Effective use of technology for strategic advantage
- A less hierarchical, or compartmentalized, organization

- Policies that promote continuous learning, teamwork, and flexibility

Where does all this place us?

Why is all this important? In a word, competitiveness. In most organizations the function that has the greatest impact on profitability is operations, for the operations function by and large adds the most value to an organization's products. No single function is more critical to the success of an organization than is any other. Without excellence in all functional areas, organizations cannot complete for long in free, competitive markets. The role of operations is to support the objectives and strategy of the corporation as effectively and efficiently as possible. This requires that people in general management and other functional management positions understand how they affect, and are in turn affected by operations decisions. Integration and responsiveness can come about only as a result of understanding and cooperation.

All managers must therefore have a good understanding of the principles that underlie the processes of designing and managing operating systems, integrating those systems with the rest of the organization and the external environment, and making the operating systems even more competitive as environments and resources change.

FRLs are composed of closely coupled functional areas. Almost every activity in which a functional area is involved influences and is influenced by other functional areas. As the library becomes more integrated and the boundaries between functional areas become hazy, the ability of managers in other functions to communicate and work closely with operations managers becomes more important. Accountants, for example, need to understand the processes by which goods and services are produced to keep the Library's internal cost accounting systems timely and informative. Human resources professionals need to help develop the technical and problem-solving capabilities required by the people on the shop floor. Purchasers need to coordinate deliveries more closely with the library's production schedule. And everyone needs to be actively involved in the firm's quest for total quality.

Organizing operations for competition

The competitive and social context in which organizations compete is changing. As a result, managers must reevaluate their attitudes and approaches to competing. The strong implication here is that only organizations

that actively implement TQM will prosper in the new competitive environment. Understanding the framework is therefore important.

Customer satisfaction leads to customer loyalty, which, according to recent studies, is crucial to long term profitability. Loyal customers spend more, refer new clients to the organization, and are less costly to do business with. Attracting a new customer tends to be about six times as expensive as retaining an old one. Knowing what entices a customer to continue to prefer one product over another or deal with organization A rather than organization B is therefore of great concern.

Obviously, the specific factors that influence the buying decision from one type of product to the next and from one market to another. Finally, however, it can be concluded that these factors can be grouped into at least six broad categories, the six dimensions of competition:

- Cost
- Quality
- Dependability
- Flexibility
- Time
- Service

And organizations have to compete to all six dimensions, because if they do not, they tend to distort the information and therefore their responses. This can be translate to mean that a manufacturer or service provider should take into account of every competitive dimension a customer or market might consider in trying to decide whether to purchase the manufacturer's product or use the provider's service. If the market begins to use a larger set of criteria against which to judge suppliers, an organization must use all those factors when deciding how to satisfy its potential customers. The leading edge organizations are considering all six dimensions and looking for synergies among them rather than trading off against each other.

Admittedly, managing or considering all six dimensions simultaneously is difficult. An organization can, however, gain a definite advantage by considering more factors than do its competitors, especially if the extra dimensions or factors are perceived of as valuable by its customers.

Organizations that can compete along all six dimensions are referred to as Fast Response Organizations (FROs). A fast response organization is built around the six dimensions of competition: cost, quality, dependability, flexibility, time, and service. Such an organization is capable of using different combinations of these dimensions of competition to address the needs of its customers in different markets. Fast response organizations

actively embody the TQM philosophy. FROs must have successfully implemented the TQM philosophy, and successful implementation of TQM must result in fast response organization. Although the two phenomena are different, they are inextricably connected. Developing the ability to compete simultaneously along the six dimensions of competition and becoming a FRO can be a challenging process. In most cases it calls for a radical departure from the traditional role of operations in an organization. What became clear there is that successful organizations invest heavily in certain structural prerequisites to enhance their operations. While the nature and extent of these investments may vary, it can be identified four distinct structural prerequisites:

- An emphasis on continuous improvement throughout the organization
- Investment in research and development
- The adoption of advanced product, process, and organizational technology
- The integration and coordination of activities throughout the value chain

As with the six dimensions of competition, no one structural prerequisite is always more important than any other. All four must be satisfied, but the emphasis placed on each varies from one organization to the next, from one industry to another, and over time.

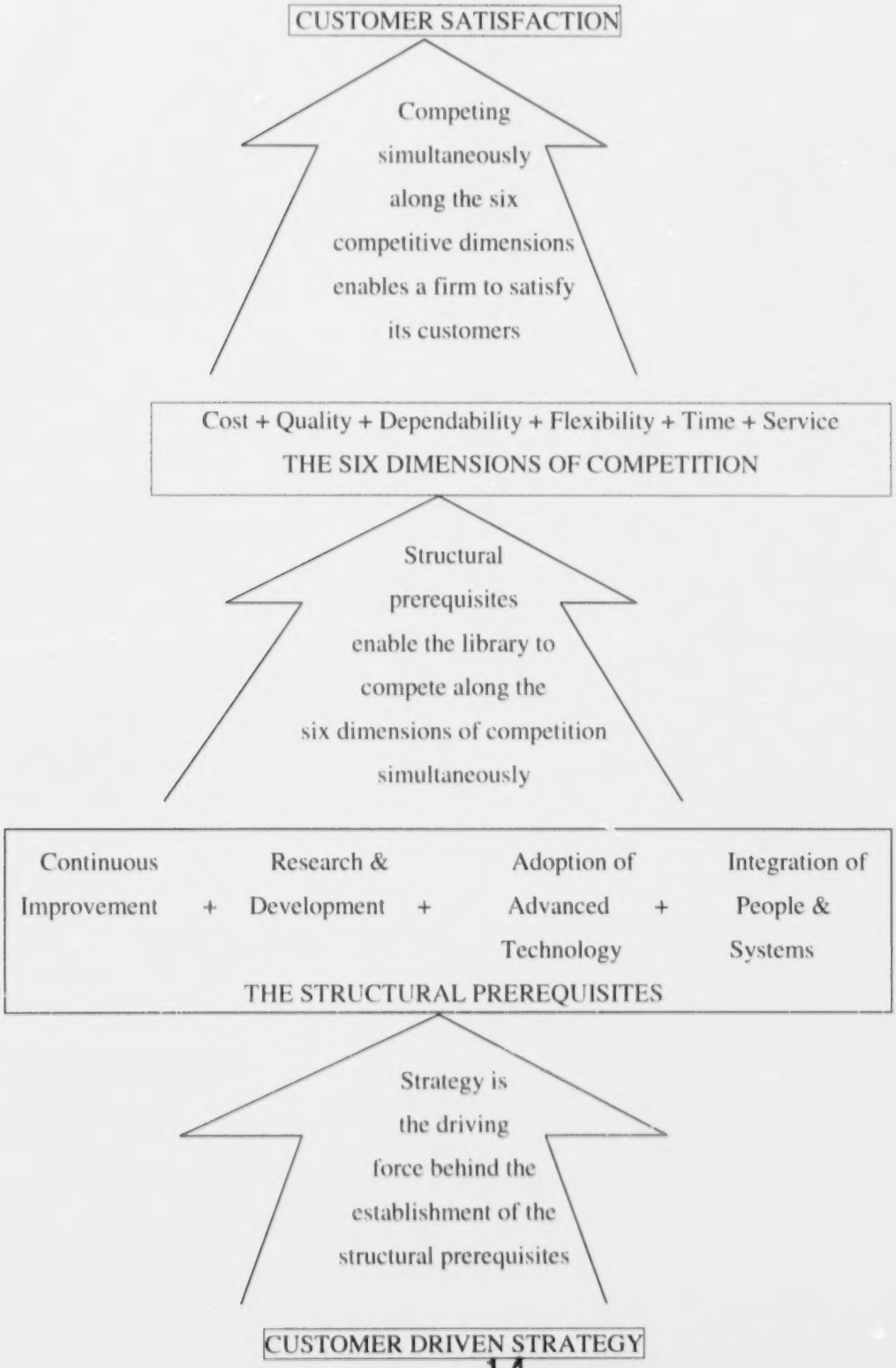
The degree to which total integration can be achieved in an organization is dependent on the organization's structure, information system, and people. Of the three, it is the attitude of the employees that is crucial. When all is said and done, it is people who do the essential integrating within organizations.

Structurally, a FRO is a flatter organization than an traditional multilevel one. This facilitates horizontal integration and allows a FRO to take advantage of many small but cumulatively significant improvements to its operations. In a multilevel organization departmental responsibilities are often clearly delineated. In this environment small improvements that affect more than one department are difficult to implement because information must flow up several management levels before it can be shared between functional areas. Since the success of each department is usually measured independently of the success of the organization, there is little motivation to work together.

Removing management levels means that more responsibility and authority must be pushed down through the organization. Empowering its employees enables an organization to tap its true potential but requires the organization to make a sincere, long term commitment to ongoing training and employee development. Job descriptions, career paths, reward systems, and department charters must be aligned with the FRO's new structure.

The exhibit at the next page, can be viewed as a road map for a FRO to follow as it strives to reach its goal of delighting the customer. The structural prerequisites enable an organization to satisfy its customers continually by competing simultaneously on cost, quality, dependability, flexibility, time, and service. However, strategy, is the driving force behind the establishment of the structural prerequisites, and it must consider very important. This framework applies to organizations in the service sector as well as the manufacturing, and of course to libraries as well.

EXHIBIT : The FRO descriptive framework


CUSTOMER SATISFACTION
Competing simultaneously along the six competitive dimensions enables a firm to satisfy its customers
Cost + Quality + Dependability + Flexibility + Time + Service
THE SIX DIMENSIONS OF COMPETITION
Structural prerequisites enable the library to compete along the six dimensions of competition simultaneously
Continuous Improvement + Research & Development + Adoption of Advanced Technology + Integration of People & Systems
THE STRUCTURAL PREREQUISITES
Strategy is the driving force behind the establishment of the structural prerequisites
CUSTOMER DRIVEN STRATEGY

Fragmenting markets. Rapid technological advancement. Shortening product life spans. Intense global competition. These trends are rendering the mass-production approach infeasible in a growing number of markets. In these markets a multiple-niche strategy - producing a family of products, each of which responds to the needs of a specific customer or market segment - is much more successful.

Until recently, product design was largely confined to the introductory and growth stages of the product life cycle. Once a product had matured and a dominant design had emerged, organizations standardized product design and began to pursue economies of scale. Specialized production equipment was put in place where possible, and few, if any, fundamental in the product design were made from then on. The most costly the effects of redesign, the less likely the redesign.

Almost all organizations are finding that they must increase the speed with which they design products as well as the quality of those products. There is no time to waste. An organization must develop products that satisfy customers' needs and expectations the first time and on time.

The trend toward implementing advance flexible technologies has also had an impact on the nature of product design. To fully realize the productivity improvements promised by these systems, product designers must be familiar with their capabilities and limitations. The product design must be carefully matched to the process by which the product will be made.

These new challenges call for a drastic change in the way in which products are designed and in the role of production in the development process.

A Fast Response Organization constantly looks for new product concepts that meet market needs and exploit the full potential of its resources. Ideas for new or improved products come from a variety of sources. The firm's research and development department may generate many ideas. Feedback from customers may trigger other ideas. Competitors, research institutes, technical literature and suppliers may also be the inspiration for new products.

Transforming an idea for a new good or service into an actual product is usually time-consuming and expensive. The costs associated with making major changes to a product concept or abandoning a product concept increase dramatically as the product development process progresses. Therefore, a rapid but effective process for identifying winning product concepts is essential for an FRO.

If the responsibility of the operating elements of an organization is to get products or provide services to customers, they must be the appropriate products or services. Consequently, designing products is a critical function. Organizing for design means organizing to identify appropriate products and getting those products to market in the shortest possible time.

It is now recognized that products should be designed to function effectively and efficiently for the whole life, not just until the warranty period is over. While this may seem obvious, until recently few products were designed to be recycled. By designing for reparability and serviceability, a manufacturer reduces a customer's in service costs; that should weight in the manufacturer's favor. It is interesting though, that designing for repair and service automatically means designing the product for manufacture.

Product suggestions can come from anywhere, and an organization must have a good process by which concepts are filtered out to ensure that design work proceeds only on the concepts with the greatest potential. It is important to identify the better concepts and turn them into appropriate products in the shortest possible time. The organization for this invariably involves parallel development of product elements or even parallel development of competing product concepts. This is necessary to minimize design time while not committing the organization to a final decision until the last possible minute. Reducing design cycle time allows the organization to capture what the market wants in a product before the mind of the market has changed. Product design takes time, but if an organization can design in half the time it takes the competitors, that organization should have more appropriate products on the market.

To give itself a better chance of having the right product, an organization needs to use all the design expertise it has available. This means involving design elements from the whole value chain. There is everything to gain by using suppliers and customers to help with the design. If all the people in the chain have real influence on the product, then their concerns will have been met. And if everyone's concerns have been met in design, that will make building the appropriate product a lot easier.

Designing In Product Quality

Success in today's market depends on how quickly companies identify their customers' needs and expectations and develop and introduce new products that satisfy those expectations. Continued success, even survival, hinges on the organization's ability to continue adapting products to changing market needs.

As they develop and control the product design process, managers need to ask these questions:

- How can the organization ensure that the "voice of the customer" is guiding its design efforts?
- What is the customer's perception of quality? How can the organization measure this?
- How can the organization estimate product costs and profitability early in the design process?
- How can the organization continually improve the product design process?

Designing an appropriate product for the marketplace involves more than the basic product design. It is a process that starts with customer needs and expectations, which turned into product requirements. From there an organization develops product and then process specifications and then produces the product. Product design does not take place in a vacuum: it starts and ends with the customer but also involves the ability to produce the desired product.

It should come as no surprise that the newer tools for product design work best in organizations that are already noted for quality. That should not stop other organizations from using these techniques; they merely have to accept the fact that their benefits will not be as great as those of better organizations until they improve sufficiently to take full advantage of the techniques.

What does an organization try to achieve with the newer approaches? First, products that are better suited to their operating environments by being designed to operate effectively within understood environmental parameters. Second, better understanding of total product costs, including whole-life approaches to cost. Included in this are notions of strategic allocation of overhead to the principal component of variable product cost. An organization wants to control systems that encourage managers to make decisions that fit in with the corporate strategy, and most cost allocation systems do not do that.

Third, the organization is trying to build in automatic processes for verifying product or process design. If the organization can identify in advance and then eliminate critical failure or cost-incurring characteristics, it can reduce the whole-life costs for its products.

Quality is what the customer wants at a price the customer is willing to pay. This value-based notion of quality is becoming more widely accepted and should drive quality decisions. An important characteristic of this definition is that there can be too much quality in a product. If a product does more than the customer requires or costs a great deal more than a competing product that does not do as much, the organization is likely to lose customers. This upper limit to product quality is one that can be expected to increase as time goes by and customer needs and expectations increase.

The critical implication here is that organizations should design products that meet customers' current needs and expectations and should keep improving products at a slightly faster rate than the rate at which expectations

change. This will lead to customers who are continually delighted with the organization's products, and delighted customers are not likely to defect.

Designing Service Processes

Selecting the most appropriate process for producing a firm's goods and services is an important decision management must make. In the 1980s it was estimated that a typical company spent about one-quarter of its operating budget on finding and fixing mistakes on the production line. A significant percentage of direct laborers were not producing anything; they were just reworking products that had not been properly made the first time. To compete effectively, libraries must develop efficient and responsive operating processes.

Process designers face special challenges in designing a process that produces services rather than goods. In many cases, the customer exerts a great deal of influence on the process. Think about a bank, a grocery store, an airline counter or a library. The length of time needed to serve each customer is usually quite variable, as is the nature of the service demanded. The inability to create an inventory of services during low-demand periods to offset high-demand periods increases the difficulty of smoothing the production flow.

Usually, it is possible to split a service operation into two identifiable parts: one that makes contact with the customer (front office operation0 and one that is free from customer contact (back office operation0. The split is important, for the more that can be placed in the back office and isolated from the customer, the more that can be managed and designed in the same way that a manufacturing operation works.

Designing Customer Contact Operations

Designing an operation with the psychological needs of the customer in mind is very important when the customer is involved in the process. The facility layout must take this into account, and the service providers have to be trained in interpersonal skills as well as in the technical details of their tasks.

Reducing variability is another key consideration in designing operations with a high degree of customer involvement. Let us quickly review some of the more commonly used tactics for doing this:

- Use a reservation system to smooth demand.

- If a reservation system is not feasible, serving customers by numbers or having a centralized queue rather than a queue in front of every server can speed the flow of customers through the system.
- Cross-train employees and assign them to tasks on the basis of current customer demand
- Design the process for peak load and have employees perform secondary functions during slow periods.
- Segregate customers by the type of service they want.
- Transfer routine tasks to the customer.

Shostack (1984) has developed a systematic approach to designing service processes that utilizes a special type of operating flow chart, called Shostack's service blueprint.

Shostack's approach to designing service processes is bases on the need to develop a more objective and quantifiable approach to designing systems that have been acknowledged to require judgement and subjectivity in design. To explore all the issues inherent in creating or managing a service, Shostack suggests that the following four steps be taken:

Step 1: Identify processes. Develop a service blueprint (process flowcharts) for the total process, being careful to differentiate between activities performed in front of the customer and those performed out of the customer's sight. The line that separates the processes is called the "line of visibility".

Step 2: Isolate fail points. Determine the points where the visible production system may fail. Built in corrective measures that make the system fail-safe.

Step 3: Establishing a standard execution time for the process. Estimate the amount of time each step in the process should take under normal conditions and the maximum amount of time the customer is prepared to spend in the system. These times become service standards.

Step 4: Analyze profitability. Continuously monitor the profitability and the time taken to service each customer. Analyze in particular variances in time caused by failure and the point at which time delays result in unprofitable business.

For every productive unit there is a specific product mix to be made within a specific corporate strategic context. This means that there is an appropriate manufacturing process by which the product mix should be made. The same is true of service processes. Process design should therefore be easy.

Why, then, do so many managers make strange process design decisions? The answer is that these decisions are not simple. The relationships among people, machines, and raw materials can be complex, and any change may lead to differences in these relationships of which a firm is not aware.

Remember, too, that the organization concerned first with effectiveness and then with efficiency. Any process must produce the desired output. Then the organization can think about making the process better. In a quickly changing environment the organization will probably never reach the stage at which its processes will be perfect; the processes should therefore be designed in part for relatively short lives and for adaptation so that they can be changed rapidly. As the organization's knowledge expands and the need to be involved with smaller market segments grows, designing for flexibility will be the aspect of effectiveness that predominates.

Manufacturers no longer make a physical product and dump it into the marketplace; now there is a great deal of service content in a successful product. Of course, service organizations have always been concerned with service design, but now every organization has to be concerned with designing appropriate products and services. In high-contact service industries in particular, the effectiveness of the product is in the hands of the service provider. As part of the service process design, therefore, organizations should ask themselves how they can more effectively support the front line staff.

Integration & Responsiveness

Integration and responsiveness must extend throughout the value chain if a library expects to become a fast responsive organization. What most needs to be integrated is information. From a physical distribution standpoint, goods should be constantly in motion until they reach the ultimate customer, and this movement should be swift and direct. The shorter the time between the start of the journey and the time when the complete product is in the customer's hands, the less uncertainty can enter the internal and external environments.

Integration is knowledge-extensive, and computers will be increasingly relied on to achieve it. Managers, and librarians, need to remember, though, that critical flexibility and responsiveness can be achieved only through people and non-programmed activity. While the communication links make accurate and fast information transfer possible, people make the critical decisions. This applies particularly to strategic decisions involving the design of products and processes and the timing of product introduction. System architecture cannot take into account hesitant decision making or a poorly implemented concurrent engineering philosophy.

Invariably, the value chain cycle time is longer than the time a customer is prepared to wait for a product. This is particularly true of items expected to be on the shelf. Inventory has to be carried in the value chain, and logic dictates that location be as close as possible in time to the customer. The shorter the physical re-supply time, the more product mix risk the retailer can take and the less inventory is needed on display. Time is money for

everyone in the value chain. Because travel time is only a small fraction of total cycle time, managers should look for time savings through improvement in internal procedures and elimination of unnecessary storage points rather than through faster and more costly means of physical transport.

Conclusions

The Fast Response Library is the paradigm for the successful library of the present and the near future. Nothing is permanent, though, and librarians, like managers in a company, need to think about what the longer-term paradigm is likely to be. If history is any guide, the future can be dimly glimpsed by extrapolating the trends examined throughout this article. The most significant of these trends are outlined below:

- An increase in the number of Libraries competing internationally and locating facilities around the globe.
- A trend toward project-specific organizations, alliances formed within organizations to achieve time and scope limited objectives.
- The development of global NetWare, of software designed to integrate activities across the organization and the whole value chain. The information superhigh- way is a precursor of the structure required to support this NetWare.
- The use of knowledge as a fundamental competitive weapon and the development of computer-based intelligence to determine what knowledge will be required to compete effectively against other global competitors.
- An increase in the strategic use of time-based competition.

The competitive libraries of the future will therefore still need to be agile. Agility implies the ability to do the following:

- Continuously monitor market conditions and market demand.
- Quickly respond to demand conditions by providing new goods, services, and information as the need is recognized by the market.
- Quickly introduce new technologies.
- Quickly modify the way in which the firm does business.
- Quickly use the abilities of all the people in the firm's value chain.

How this will be achieved is conceptually straight-forward: the senior management of the organization will develop an organic approach to competitive structure, using the information spine of the organization to link together focused networks of organic elements along the complete value chain. These networks will consist of units from within and outside the parent organization, cooperatively rather than legally integrated through the pursuit of mutually beneficial market objectives. These limited-duration organizations will be developed in response to market need and disbanded when the need is satisfied. It is these organizations, which will use enterprise integration and will need integrative software that allows planning and integration at the global rather than the local level.

What form the integration will take is not clear. However, its implementation will be fraught with challenge and difficulty because even the best organizations still cannot effectively manage existing local integrative mechanisms. These integrative technologies are global only in the geographic sense, allowing managers to coordinate limited activities at different places. As everyone knows, though, global also means across all elements and all activities.

The closer one gets to enterprise organization, the closer one gets to the operationalization of economies of integration. That means, the potential to eliminate niche competitors by allowing global competitors to battle over very small markets as well as very large ones. This will require changes in the nature of industry organization, the nature of competition, and the nature of the organization. How these forces will evolve is difficult to predict, but thinking managers must prepare themselves and their companies for the new forms of competition that will inevitably occur. These managers will not develop the newer and more powerful technologies that will allow true global integration of the enterprise or be able to dictate the nature of market demand or industry dynamics. They will, though, need to be able to respond to the challenges presented by these changes so that their organizations can evolve to meet the new competition. Strategic responsiveness and agility are, and will remain, dependent on the abilities, imagination, and inclination, of organization managers.

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